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Executive Summary

The California Legislature in Senate Bill 1712 has directed the California Public Utilities Commission (Commission) to consider whether California should expand its low-income subsidy program and require all carriers to provide high-speed Internet access in their “basic service” package. This narrow question arises in the context of evolving public policies and changing consumer patterns in a dynamic telecommunications marketplace. Increasingly, access to the Internet - who has it and who doesn't - is being viewed as a critically important matter of social and economic equity. SB 1712 proposes one possible means to address this issue.

This effort to utilize the established and successful universal service mechanism to address Internet access and equity issues is understandable. These access and equity concerns are legitimate given the growing importance of the Internet to the economy, society as a whole, and for individuals who risk marginalization for lack of access and opportunity.

In the course of this inquiry the Commission conducted research and solicited comments from a broad cross-section of the public. These comments show that there is little public interest in subsidizing broadband services through telephone surcharges.

With regard to high-speed access, we found that although high-speed Internet access is available to 73% of Californians, only 13-17% of those having a choice have chosen to subscribe to it.

We also found that adding high-speed access to basic service would quadruple the price of low cost basic service to all customers and result in a 3.96% surcharge to all other customers as well as increasing Universal Lifeline Telephone Service program costs to nearly \$1 billion per year.

We conclude that the Commission is not precluded by law from establishing a fully state funded universal service program that includes broadband services. The Commission does not appear to have authority to include in the universal service program funding of ISP or other Internet services, such as e-mail.

We also conclude that today high-speed Internet access at home is not an essential service. Accordingly, we recommend against expanding the definition of basic service to include high-speed Internet access at this time. This conclusion is consistent with the recent Recommended Decision of the Federal-State Joint Board on Universal Service, CC Docket No. 96-45, issued July 9, 2002, where it concluded that:

“However, the issue for universal service is whether such access is “essential” to consumers generally and residential consumers particularly. Advanced or high-speed Internet services do not appear to be “essential” for consumers to access such resources”. (Recommended Decision of the Federal-State Joint Board on Universal Service, CC Docket No. 96-45, issued July 9, 2002, page 5, Paragraph 12)

However, we recognize the importance of access to the Internet. Our current subsidy program for schools, libraries and Community Based Organizations (CBOs) offer crucial assistance in providing public access to the Internet. We will consider enhancements to improve utilization of the program by expanding the services, quantities and discounts available to bring all program groups into parity. The Commission is expected to act on this issue in Fall 2002.

CHAPTER 1

Internet & Broadband Services

A. Internet Use

Twenty years ago, basic telephone services were provided by monopoly carriers, the nation's television programming was dominated by three networks, and computers- big, slow, and expensive- were anything but personal. Today, the convergence of telephone, television, and computer technologies is redefining the ways we learn, stay healthy, shop, entertain ourselves, and work. The promise of the information superhighway - the Internet - is only beginning to be realized.

In the last few years, Americans' use of the Internet and computers has grown substantially:

- The rate of Internet growth in the U.S. is two million per month.
- More than half of the nation, 54% of the population, is now online.
- Children and teenagers use computers and Internet more than any other age group.
- Internet use is increasing for people regardless of income, education, age, ethnicity, or gender.

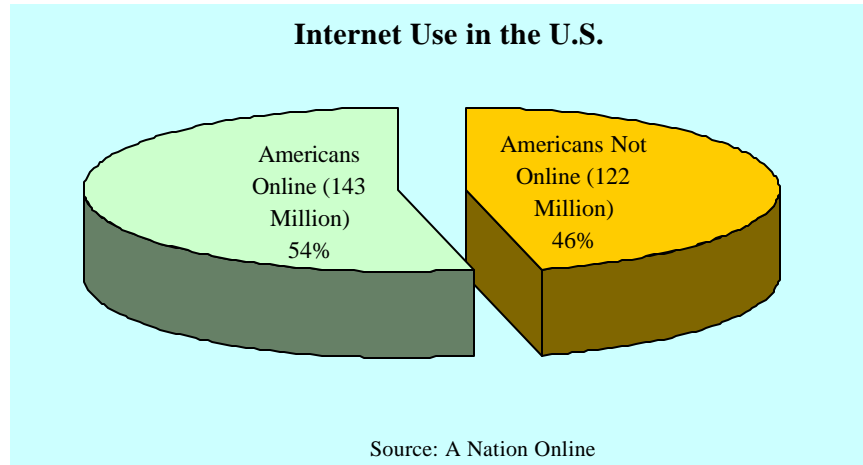
Source: A Nation Online: NTIA/ESA Report

In a global economy that demands higher and higher skills, expanding the reach and scope of these emerging technologies and networks is a national priority. The National Telecommunications and Information Administration (NTIA) and Economics and Statistics Administration (ESA) joint project, "A Nation Online: How Americans Are Expanding Their Use of the Internet," (A Nation Online)¹, reports that 54% of individuals in the U.S., 143 million Americans, use the Internet.

¹ "A Nation Online: How Americans Are Expanding Their Use of The Internet," a joint project of the National Telecommunications and Information Administration and the Economics and Statistics Administration, relying on the September 2001 US Census Bureau's Current Population Survey, published February 2002.

<http://www.ntia.doc.gov/ntiahome/dn/anationonline2.pdf>.

Figure 1-1



The availability of basic telephone service has been expanded to nearly every household by use of federal and state universal service programs funded by telephone surcharges. Though broadband access to the Internet is not considered a basic service component at this time, households having telephone service have the capability to access the Internet via the dial-up connection offered by Internet Service Providers (ISPs) or telephone companies.

This report examines the feasibility of including high-speed Internet access in the package of basic services telecommunications providers must make available to all customers, or a two-tiered approach where only customers who use the service pay for it, or providing a 50 percent broadband service discount to low-income households.

B. High-Speed Internet Access Services/Broadband Services

Broadband transmits data at more than four times the speed of that attainable with a regular dial-up connection.

The Commission investigated the “feasibility of redefining universal service by incorporating two-way voice, video, and data service as components of basic service” as required by the California Legislature in Pub. Utilities. Code § 871.7(c). The statute also references “high-speed communications networks.” It contemplates including high-speed Internet access services, often colloquially referred to as “broadband,” in the universal service programs. However, as noted by the FCC, the terms “broadband” as well as “broadband services” do not have well-recognized definitions and have “come to mean different things to many different people.”² For clarity, the FCC has adopted specific definitions for advanced telecommunications capability and high-speed service. “Advanced telecommunications capability” is any infrastructure capable of delivering data at a minimum speed of 200 kilobits per second (kbps) in each direction. A telecommunication service with over 200 kbps capability in at least one direction is considered “high-speed”. However, the Commission has also recognized that as technologies evolve, the concept of broadband also would evolve. The FCC states:

We may consider today’s “broadband” to be narrowband when tomorrow’s technologies are deployed and consumer demand for higher bandwidth appears on a large scale³

Recognizing these complications, for the purposes of this report, we will mainly rely on the FCC’s terminology. Thus, “broadband” or “broadband

² In the Matter of Appropriate Framework for Broadband Access to the Future of Television and related Matters, CC Dockets No. 02-23, 95-20, and 98-10, at note 2

³ Ibid.

FCC Chairman Michael Powell on “What is Broadband?”

Oddly enough a clear, uniformly accepted definition evades us. It is accepted that whatever broadband is, it is fast (the Commission has defined it as 200 kbps). We have very forceful debates about how fast is fast enough. I submit, however, that broadband is not speed. It is a medium that offers a wide potential set of applications and uses. With the telephone, we knew what the “killer app” was. It was voice. The “broad” in broadband should be recognized as meaning more than the “fat, fast pipe.” It should represent the nearly infinite possible uses and applications that might be developed and that a consumer might use. I think broadband should be viewed holistically as a technical capability that can be matched to consumers’ broad communication, entertainment,

services” means any transmission service that supports a minimum of 200 kbps in either direction (either downstream from the Internet to the user, or upstream from the user to the Internet) more than four times the speed attainable with a regular telephone line and a computer modem -->200 kbps versus 56 kbps. Consumer oriented broadband services can be provided by cable modem, digital subscriber lines(DSL) over traditional telephone lines, satellites, and terrestrial fixed wireless services. Each of these technology platforms is discussed in more detail in Attachment G. According to the FCC, advanced telecommunications services offering high-speed access are being deployed to all Americans in a reasonable and timely manner. ⁴

Table 1-1
Average Time Required to Download Different Activities
Using Internet Access Services
Assuming Optimal Conditions⁵

Internet Functions	Dialup (56 K)	Cable (1-5 M)	DSL (1 M)	Wireless (1-5 M)	Satellite (512 K)
An email (5 Kilobytes)	1 sec.	<1 sec	<1 sec	<1 sec	<1 sec
A basic web page (25 Kilobytes)	10 sec.	<1 sec	<1 sec	<1 sec	<1 sec
A complex web page (500 Kilobytes)	90 sec.	4 sec	7 sec.	4 sec.	15 sec.
One five-minute song (5 Megabytes)	15 min.	40 sec.	1 min	40 sec.	2 min
One movie preview (30 Megabytes)	80 min.	4 min.	7 min.	4 min.	15 min.
One two-hour movie (500 Megabytes)	20 hrs.	70 min.	2 hrs.	70 min.	4 hrs.

⁴ “Federal Communications Commission Third Report, CC Docket 98-146,” adopted and released February 6, 2002.

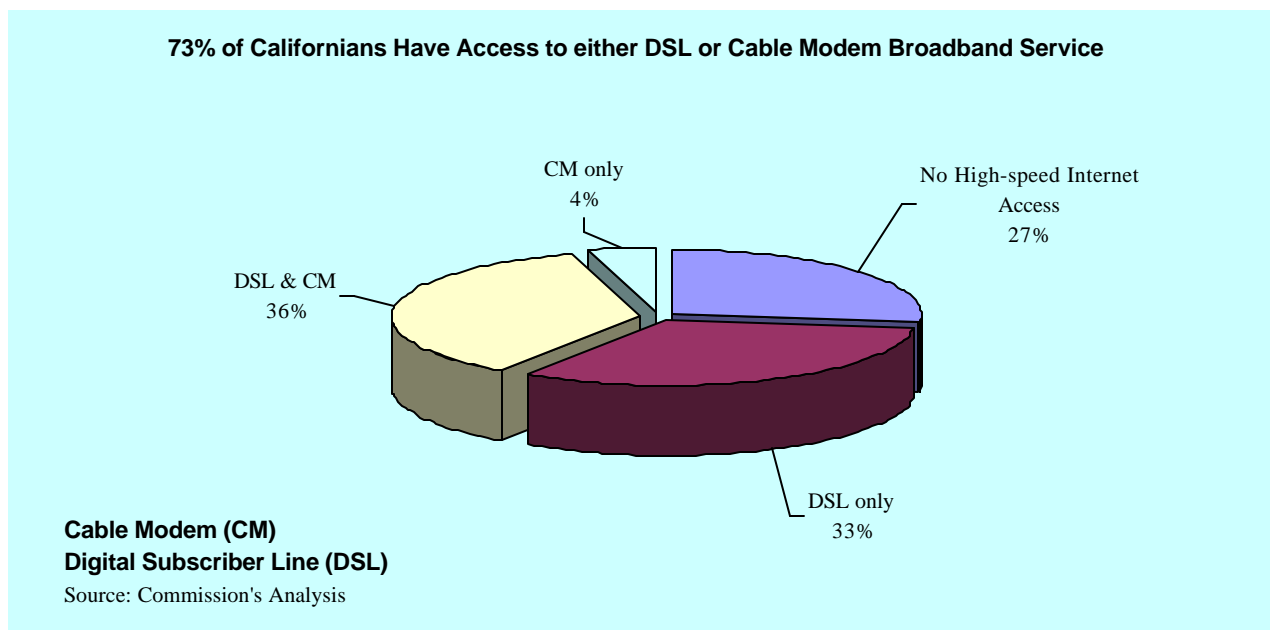
⁵ LBJ School of Public Affairs' Policy Research Project gary.chapman@mail.utexas.edu
<mailto:%20gary.chapman@mail.utexas.edu>.

Table 1-1 illustrates how several common Internet activities can be performed using different technologies. It demonstrates that connection speed to the Internet greatly impacts the functionality, or usability of the Internet. For widely used⁶ Internet activities, such as e-mail and viewing basic web pages, dial-up is sufficient. However, entertainment media, such as music downloads and videos are inconvenient or completely impractical. Clearly, broadband provides an improvement in access speed quality, though even its capabilities become limited when functioning with video. There are other attributes regarding broadband that makes it a desirable service, such as its “always-on” characteristic, and the increased ability to create and manage Internet content.

⁶ According to A Nation Online: NTIA/ESA Report, February 2002, most common activities by Internet users are: e-mail (84%), search for information (67.3%), and source of news (61.8%).

In California, consumer oriented broadband services are mainly provided via DSL or cable modem services.⁷ Figure 1-2 shows the availability of broadband in California by DSL and cable modem technologies. It shows that DSL and cable modem broadband services are available in areas where 73% of the California population reside. Of the total California population, 36% reside in an area served by both DSL and cable modem, 33% by DSL only, 4% by cable modem only, and 27% with no available DSL or cable modem service.⁸

Figure 1-2



⁷ Satellite service provides nearly 100 percent broadband coverage. However, satellite service is subscribed by a small percentage of broadband service users.

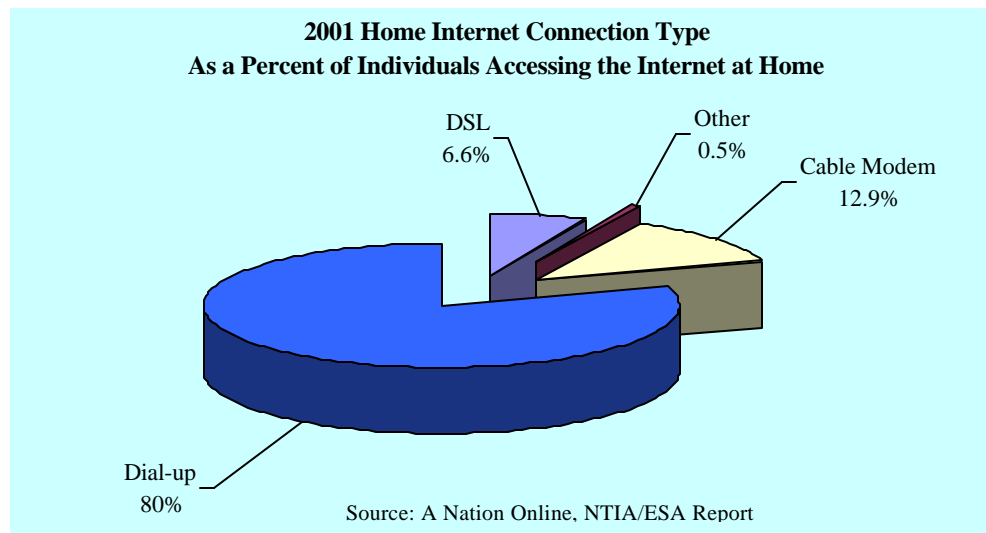
⁸Preliminary Commission staff analysis. Commission staff has issued data requests of the industry to further refine its analysis.

C. Internet Use In the U.S.

Consumers access the Internet primarily via basic phone line “Dial-up”

Figure 1-3 shows that of those accessing the Internet in the U.S., 80% log on via a regular telephone line.⁹ Cable modem is the next most-used method of connecting to the Internet at a distant level of 12.9%, and DSL use is 6.6%. The apparent preference for regular “dial-up” is not for lack of service options. However, the price differential between dial-up access and broadband and the small percentage of broadband subscription relative to its availability indicates that consumers possibly view broadband as overpriced relative to the benefits of subscribership¹⁰.

Figure 1-3



⁹ A Nation Online: NTIA/ESA Report, February 2002.

¹⁰ Internet service provider dial-up prices are generally at least two times less expensive than broadband service charges. For example AOL (ISP) charges \$23.90 (This includes both access service and ISP services offered by AOL.) per month and SBC Pacific Bell DSL service (broadband) charges \$49.95.

Who is not on line?

Low income, ethnicity, and limited education continue to be factors that reduce the likelihood a person will access the Internet at all, much less with a high-speed connection. These factors tend to be correlated – a limited education tends to track with low income. The increased likelihood of a person being “offline” (having no Internet access) is related to income, education, and ethnicity.

However, “A Nation On Line” reports that overall Internet use is increasing for people regardless of income, education, age, race, ethnicity, or gender. The report indicates that between December 1998 and September 2001 Internet use by individuals in the lowest income households (income less than \$15,000) increased at a 25% annual growth rate. Internet use among the highest-income households grew from a higher base, but at a slower pace of 11% for the same time period.¹¹

People Without Internet Access in the U.S.

“National average is 46%”

People in households with low family incomes:

- 75% of people who live in households where income is less than \$15,000
- 66.6% of those in households with incomes between \$15,000 and \$35,000;

Hispanics:

- 68.4% of all Hispanics and
- 85.9% of Hispanic households where Spanish is the only language spoken;

African American:

- 60.2% of African Americans

Adults with low levels of overall education

- 60.2% of adults (age 25+) with only a high school degree
- 87.2% of adults with less than a high school education

¹¹ A Nation Online: NTIA/ESA Report, February 2002.

CHAPTER 2

Senate Bill 1712 & Universal Service

A. Senate Bill 1712 Proposes Changes to Universal Service Programs, If “Feasible”

SB 1712 requires the Commission to open a proceeding to “examine the current and future definitions of universal service” and to report its findings and recommendations to the Legislature. In particular, SB 1712 directs the Commission to investigate the feasibility of including broadband in the definition of “basic service” used for universal service programs. SB 1712 lays out numerous objectives for the Commission’s proceeding and directs the Commission to hold public hearings to encourage participation by a broad and diverse range of interests from all areas of the state. (See Attachment B.) In July 2001, the Commission initiated a proceeding in response to SB 1712.

SB 1712 Requires Commission to determine whether expanding “basic service” to include broadband is “feasible.”

“Feasible” means technological and competitive neutrality, funding that is equitably distributed, and benefits that justify costs.

Integral to the issues raised by SB 1712 is the definition of universal service the Commission adopted in Re Universal Service and Compliance with the Mandates of Assembly Bill 3643, 68 CPUC 2d 524

The universal service decision standards for changing definition of “basic service”:

Service must be “essential”, used by 65% of customers, and benefits must outweigh cost.

(D.96-10-066, Universal Service Decision). In that Decision, the Commission noted that over the years universal service has developed a two-fold meaning with regard to telecommunications services. First, a certain minimum level of telecommunications services, “basic service,” must be available to all Californians. Second, the rates for such services must be affordable.

B. Universal Service Is A Component of California's Telecommunications Policy

Universal service has historically evolved to represent the public policy objective that all households have access to affordable basic telephone services. Universal service is designed to overcome barriers, like income, education, race, physical conditions and geography, to obtaining basic telephone services. California's universal service goal is to provide basic services at affordable rates to at least 95%¹² of all California households.

The Commission's commitment to preserving and enhancing universal services was clearly articulated in its 1993 strategy report to the Governor regarding the state's telecommunications infrastructure. The report, entitled Enhancing California's Competitive Strength: A Strategy for Telecommunications Infrastructure, promoted competition in the telecommunications market as the most effective way to ensure that services made available to customers would keep pace with innovation and change in telecommunications.¹³

The Infrastructure Report's findings were largely endorsed by the Legislature. In 1994, the California Legislature passed Assembly Bill 3606 (Moore, Chapter 1260, Stats. 1994), which expressed its intent that the Commission open all telecommunications markets to competition by January 1, 1997. The Legislature in Assembly Bill 3643 (Polanco, Chapter 278, Stats. 1994) further mandated the Commission to ensure that the goals of universal service continue as competition in the telecommunications market develops.

¹² Adopted in D.96-10-066, Universal Service Decision.

¹³ The Infrastructure Report included public input gathered during three Commission En-Banc Hearings held with a diverse group of representatives from the fields of medicine, education, technology, public interest and industry.

C. California Revised Its Universal Service Programs In 1996

On January 24, 1995, the Commission instituted Rulemaking (R.) 95-01-020 and Investigation (I.) 95-01-021, culminating in Decision (D.) 96-10-066 (Universal Service Decision). The Universal Service Decision established a definition of services that are so essential as to be considered a necessary part of basic service and subject to support mechanisms to ensure their availability. (See Attachment A.) Finally, the Universal Service Decision replaced implicit subsidies contained in the telephone company “average-rates” with an explicit subsidy for high-cost areas of the state. The Universal Service Decision rejected proposals suggesting that Integrated Service Digital Network (ISDN) be included in the definition of basic telephone service. The Commission concluded that ISDN technology was not prevalent enough, nor the broadband market mature enough to define it as the reigning technology appropriate for subsidization to make it ubiquitous in California. Had the Commission adopted the proposed ISDN standard, it would have proven to be a bad investment and a costly mistake. To ensure that inappropriate investments such as ISDN not be required as a component of basic service, the Commission established standards in D.96-10-066 for determining when a new service should be included in basic service. Among other things, the standard requires a substantial majority, 65%, of residential households to subscribe to the service and that the service be considered essential.







The Commission Universal Service Programs

The Commission has implemented six universal

PUC Defined Basic Service Components:

- Single party local exchange services;
- Interchange carrier access;
- Directory assistance;
- Directory listing;
- Operator services;
- Information services;
- Ability to place and receive calls;
- Touch-tone dialing;
- Lifeline rates for eligible customers;
- Customer choice of flat or measured service (California High-Cost Fund A entities are exempt from this requirement);
- Voice grade connection to public switched network;
- One-time billing adjustment for charges incurred inadvertently;
- Free access to information about ULTS (Lifeline), emergency services, and to information regarding service activation, termination, repair, and billing.

service related programs, with a combined annual budget of approximately 1 billion dollars to accomplish state universal service objectives. These programs lead the effort to achieve the universal service goal of providing affordable basic services to at least 95% of all customers in California regardless of geography, language, cultural, ethnic, physical conditions, or income differences. These programs are funded by all customers, except Lifeline customers, through individual program surcharges currently totaling 4% assessed on customer bills for intrastate telecommunications services. California's Universal Service Programs include:

-  **Universal Lifeline Telephone Service (ULTS):** 50% to 70% discount on the basic service rates for low-income residential customers provided by all Local Exchange Carriers (LECs) & Competitive Local Carriers (CLCs). Surcharges: 1.45%
-  **California High Cost Fund-A (CHCF-A):** subsidies to 13¹⁴ small LECs to reduce disparity in basic service rates with large LECs and to provide basic service in high cost rural areas. Surcharges: 0.36%
-  **California High Cost Fund B (CHCF-B):** subsidies to LECs and CLCs that provide service in high cost rural areas. Surcharges: 1.42%
-  **California Teleconnect Fund (CTF):** discounted services to schools, libraries, hospitals, clinics, and Community Based Organizations (CBOs). Surcharges: 0.30%
-  **Deaf and Disabled Telecommunications Program (DDTP):** no-cost relay services and devices for deaf and disabled. Surcharges: 0.48%
-  **Payphone Service Provider Enforcement Program:** provides inspection of payphones and installation of payphones for public health, safety and welfare.

D. Telco Act and FCC Rules Do not Preclude An Expanded State Program

Under Section 254 of the 1996 Telecommunications Act, Congress gave states significant responsibility to maintain universal service in newly competitive markets.

¹⁴ There are 17 small LECs, but only 13 are qualified to participate in the CHCF-A.

The 1996 Act provides for both a mandatory federal universal service fund and permissive state universal service funds. Congress provided that states could supplement federal universal service support with state universal service support so long as the state program is not inconsistent with the FCC's rules to preserve and advance universal service. Currently, the Commission's universal service programs comport with the federal programs.

All telecommunications carriers are required to contribute funds to support universal service programs based on their revenues earned in providing interstate service (for the federal programs) and intrastate service (for the state programs).

In adopting Section 254 of the Act, Congress expressly provided that a state may adopt regulations not inconsistent with the FCC's rules to preserve and advance universal service. A state may also expand the scope of universal service so long as the state relies on support mechanisms that do not rely on or burden Federal support mechanisms.

Shared Structural Requirements for Federal and State Universal Service Programs:

- Define universal service to include, at a minimum, any essential service that is subscribed to by a substantial majority of residential customers;
- Revise and update the definition periodically;
- Make included services eligible for subsidy supports;
- Ensure that quality services be available at just, reasonable, and affordable rates;
- Mandate that low-income consumers and those in rural, insular, and high-cost areas, be charged rates reasonably comparable to rates charged for similar services in urban areas, and subsidize access and usage by schools, health care facilities, and libraries.

As a matter of law, the Commission is not precluded from establishing a universal service program that provides more benefits than the federal program as long as such expanded program does not draw on federal program funds. It is therefore possible

for the Commission to establish a fully state funded universal service program that includes broadband services.

CHAPTER 3

The Commission Opened A Docket to Consider Whether to Redefine Basic Service

A. The Commission Sought Comment On the Proposed Changes to the Definition of Basic Service From A Wide Range of Interested Persons

To consider the issues raised by SB 1712, the Commission initiated its Rulemaking on the Commission's Own Motion to Comply with the Mandates of Senate Bill 1712, R. 01-05-046 (OIR). The Commission sought comments from a broad based group consistent with both the requirements of SB 1712 and its own desire to ensure that the examination of the definition of basic service is done with the greatest possible range of insight. The Commission served the OIR on over 2,000 individuals and groups. The Commission also directed all telecommunications carriers to inform their customers of this proceeding, and the Commission's interest in receiving their views.

To guide the parties in their consideration of the issues raised by SB 1712, the Commission included with its OIR a list of 22 questions. These questions are reproduced in Attachment C. The questions touch on an expansive series of issues and evoked an equally expansive range of comments. A list of parties filing comments or reply comments is set out in Attachment E. A summary of parties' responses to the inquiry into several broad issues is set out below and focuses on Commission action in response to SB 1712.

In addition to the written comments from the parties, the Commission scheduled

seven Public Participation Hearings throughout the state.¹⁵ The Commission also received hundreds of letters, both on paper and electronically, and many telephone calls.

B. Public Participation Hearing (PPH) Participants Sought Greater Availability of Advanced Services, And Improvement of the California Teleconnect Fund

The Commission held PPHs in Fresno, Roseville, San Diego, San Jose, and Eureka. Several topics were raised at all of the hearings. Although not directly implicated by SB 1712, participants noted that many areas of the state do not have advanced services such as DSL, broadband, and videoconferencing, available at all. The infrastructure simply has not been constructed to provide these services in all areas.

Comments by Californians

PPH participants sought greater availability of advanced services, and improvements in the CTF.

Letters and telephone calls oppose expanding the definition of basic service to include broadband.

Parties filing formal comments oppose expanding the definition of basic service as too costly and beyond the Commission's jurisdiction.

Medical providers, particularly in rural areas, emphasized the critical need for advanced telecommunications services, such as video conferencing. These providers pointed out that the technology is available to enable patients in remote locations to conveniently confer with medical experts located in a distant place. They also emphasized the limited availability of medical experts in non-urban areas of the state, and the great distances rural patients must travel to consult with needed specialists.

¹⁵ Two of those hearings were scheduled for September 11 and 12, and were cancelled due to the events of September 11, 2001.

They stated that advanced telecommunications services are the only immediately available means to improve the access to high quality medical services in remote areas.

Representatives of several schools also participated in the hearings. They explained that schools are striving to bridge the digital divide through public and private programs that provide computer hardware and software for student use. In addition, to defray the monthly telecommunications costs associated with Internet access as well as general telephone use, the schools are active beneficiaries of the CTF.

While the schools noted satisfaction with the CTF, some representatives suggested that expanding the definition of the types of charges eligible for discount from monthly recurring charges to one time installation charges would be helpful to the schools, although the federal program already partially provides this subsidy.

A representative from the Library of California Board explained that the Board administers state programs and allocates shared resources among all types of California libraries including public, school, academic and special libraries. The Library of California has almost 1800 participating libraries. Telecommunications services are an essential element of the Library of California, providing a vehicle for delivery of a variety of information and access resources. The Board representative stated that public libraries have used the CTF to leverage other programs to provide a high level of public access to the Internet. The programs include: the Federal E-Rate Telecommunications Discount Program, the Federal Library Services and Technology Act and the bill implementing the Gates Foundation U.S. Library Program.

The Board representative also stated that 132 of 179 California public library jurisdictions, or 73%, currently participate in the CTF. This relatively modest subsidy has a substantial impact on resource sharing through the public libraries. The representative concluded that the Library of California investment in telecommunications infrastructure is an important part of the Library of California Act, and that the CTF enables them to achieve their goals at reduced costs.

C. Most of the PPH Participants, Letters and Telephone Calls to the Commission, and Parties Filing Formal Comments Opposed Expanding the Definition of Basic Service

Most individual members of the public in the PPHs stated their opposition to the proposal of including broadband in the definition of basic service. This opposition was primarily based on the resulting cost. The comments objected to the already high levels of surcharges on telephone bills and any proposals, such as this one, to increase those surcharges.

In addition, the substantial majority of letters received by the Commission opposed expanding the definition of basic service to include broadband. Many letter writers stated that they were not pleased with the current level of surcharges placed on their telephone bills, because these surcharges increased the overall bill. Some letter writers explained that they were on a limited income and could not easily afford to pay all the current state and federal surcharges, much less any additional amounts to fund broadband services.

Other people pointed out that some members of the public do not have a computer, have no interest in using one, and should not be required to pay for others to use a computer. People also argued that while Internet access may be convenient, it is far from a necessity in our society.

The official parties to the proceeding filing comments agreed that a “digital divide” existed and that it was detrimental to social and economic development.

Only one party, La Raza, concluded that expanding the definition of basic service is a desirable means of bridging this divide for all citizens. LaRaza argued that the definition of universal service should include broadband access, and that this is a matter of utmost importance to the well being of U.S. residents, their health care, their

potential contribution to the economy through education and training and the democratic process itself.

Other than La Raza, the parties generally agreed, however, that expanding the definition of basic services to include advanced data and video service was not a wise or feasible means to bridge the “divide” at this time. The parties arriving at this conclusion generally made three arguments: (1) that the Commission lacks jurisdiction over many of the current and potential suppliers of advanced data and video services, (2) that the costs of subsidizing access to such services are prohibitive, and (3) intervention in a new and emerging market is not appropriate at this time.

D. Parties Claim That the Commission’s Jurisdiction Over Broadband Services Is Limited

Some parties, such as AT&T Wireless, Cox, and others claim that the Commission has no jurisdiction over broadband, or over all current or potential providers of these services, for example, wireless carriers. TURN breaks the problem of providing Internet access to all Californians into three components. First, the customer requires certain equipment – a computer and modem. The Commission has no role in regulating the provision of this equipment. Second, the customer needs network access. The Commission does have a substantial role here, but TURN argues that it can best exercise that role by keeping network access costs, i.e., local residential service, as low as possible. Third, while the customer needs an Internet service provider, the Commission has no jurisdiction over such providers.

To address what it perceives to be problems of the Commission’s limited jurisdiction, LaRaza proposes a comprehensive restructuring of the “universal service regime at all levels of government with the cooperation of regulatory levels, federal, state, and local.” La Raza envisions a contractual or voucher

Majority of Parties Commented:

Access to computers and the Internet is becoming increasingly important for full participation in America’s economic, political and social life.

Emerging advanced digital telecommunication technologies, “broadband,” bring higher speed access and advanced services such as two-way video.

The Commission does not regulate all providers of these services.

The Universal Service programs require Commission oversight of service providers.

Ubiquitous broadband is too costly.

system that would enable eligible participants to select the supplier and technology they wish, with the voucher being funded through general taxes and not embedded in fees or surcharges.

Though Commission jurisdiction over broadband service and providers may be limited in ways that are not yet fully defined, we conclude that the Commission does have the authority to require local telephone companies providing basic telephone service to include broadband access service as a component of its basic exchange telephone service obligation. However, such authority does not include Internet services, such as Internet access provided by the ISPs, nor computers or other equipment.

E. LaRaza Is the only Party Advocating the Inclusion of Broadband In the Definition of Basic Service

LaRaza questions the wisdom of both the general requirement that a certain level of participation must be achieved, as well as the specific requirement that the participation level be 65%. LaRaza states that many beneficial goods are not held by 65% of the population, but that does not lead to the conclusion that such goods are not important. LaRaza points out that it will take a number of years for broadband to “trickle down” to the less affluent members of society, and concludes that the 65% requirement “institutionalizes and perpetuates a two-tiered telecommunications system in California and reinforces redlining patterns.” LaRaza Reply Comments page 5.

Even prior to any estimate of the actual costs of such a program, Latino Issues Forum (LIF) and TURN counsel against adding broadband to the definition of basic service. These parties, and others, contend that the purpose of the universal lifeline service program is to enable low-income persons to have access to basic telephone service. Any proposal that would increase the price of service, these parties state, would lead to low-income customers being unable to afford the service at all.

California Cable Television Association (CCTA) adds some detail to TURN's and LIF's fears. CCTA assumed a modest subsidy for DSL access for current lifeline customers and determined that the current lifeline rate of \$5.34 would have to increase to \$30.34 for all lifeline customers. This result occurs because by adding DSL services to the definition of basic service, all lifeline customers must then purchase the new package of "basic" services so all lifeline customers would pay the higher rate.

LaRaza makes several cost assumptions, with which Verizon takes issue, and concludes that a lifeline rate for broadband and Internet service provider services would be \$10. LaRaza admits that this rate alone may be "difficult to afford" for California's poor. However, such a rate for Internet services, when added to the current lifeline rate for telephone service, would result in a total monthly lifeline rate of \$15.34, or triple the current Lifeline rate.

The argument, that broadband is "important" and that low income persons should have access to it, does not justify the monthly cost increases that would be imposed on all customers, regardless of interest in broadband. As TURN points out, keeping monthly telephone rates low makes dial-up service more affordable. Adding broadband to basic service will raise the monthly price for all customers to prohibitively expensive levels.

In addition, including broadband in the definition of basic service does not address other barriers to using broadband service – customer equipment (modem and computer) and training. The proposal to bring broadband service to all Lifeline customers, who will have to pay for it whether they want or will use it, does not address the fact that customer equipment may be prohibitively expensive for low-income customers. Hence, network investments would be underutilized unless these other barriers are addressed.

Many customers who could easily afford broadband choose not to subscribe, suggesting that the service is not essential or even desirable. Furthermore, we must

differentiate between an “important” service and an “essential” service. Broadband may be an important service, but at this time it is clearly not an essential service. When it becomes essential, the Commission may revise its universal service programs.

F. Parties Suggested Modest Modifications to Other Components of the Universal Service Program

In addition to comments on the proposal to expand the definition of basic service to include broadband, several parties submitted comments or recommendations on changes to other components of the universal service program.

Changes to Accommodate the Needs of Deaf and Disabled Customers Should Be Made to the Programs Specifically Directed At Those Customers, Not Universal Service

The Deaf and Disabled Telecommunications Program Administrative Committee (DDTPAC) states that “universal service” implies that all components of basic service should be available to all customers, regardless of, among other things, physical, sensory or mental limitations. DDTPAC recommends that the Commission expand the definition of basic service to include telephone relay service via video and the Internet, in addition to voice and TTY¹⁶. DDTPAC explains that such services are necessary for deaf individuals to communicate fully in their primary language, American Sign Language, which requires visual observations.

California Association of Deaf (CAD) proposes that the Commission expand the definition of basic service to include: wireless digital telephone and data services, broadband services, and Internet services. CAD states that these services are

¹⁶ Telecommunication devices with keyboard and visual display for people who are deaf, hard of hearing or speech impaired.

necessary for many deaf citizens to enjoy the same opportunities that most citizens enjoy from currently available telecommunications services.

Verizon responds to both DDTPAC and CAD by pointing out that the needs of deaf customers can best be met by changes to programs specifically tailored to those customers' needs. Verizon points out that redefining basic service available to all customers to include such services would be costly and unnecessary. Verizon advocates changes to the DDTP to achieve any desired changes in services for deaf customers.

Proposals to expand the definition of basic service used in universal service programs to include additional services for deaf and disabled customers are best addressed in proceedings specific to the Deaf and Disabled Telecommunications Program. The Commission oversees programs specifically designed to meet the needs of this customer group. To the extent changes are required, the changes should be made to the specific program, not the entire universal service program.

Modifying California Teleconnect Fund is a better way of increasing Internet access.

At several PPHs and in the formal written comments, parties suggested that modifying the CTF would be a more useful way of increasing Internet access than the proposed changes to the definition of basic service. Pacific Bell and other parties proposed increasing the discount for Community Based Organizations (CBOs) from 25% to 50%. We agree that the enhancement of CTF is a readily available way to increase access to telecommunications services generally as well as to the Internet, and will discuss this issue in Chapter 4, section F.

Chapter 4

Broadband As A Component of Basic Service?

A. Broadband Should Not Be Included In the Definition of Basic Service At This Time

The Legislature in adopting SB 1712, required that the Commission determine that any changes to the definition of basic service must be feasible, as defined in the statute. Similarly, the Commission in D. 96-10-066 adopted a set of standards for determining whether the definition of basic service should be changed. Whether broadband should be added to this definition requires analysis of those standards. As set out below, broadband services do not satisfy the feasibility standards

found in SB 1712, nor do they meet the Commission's standards for changing the definition of basic service established in D.96-10-066. The primary reasons for this conclusion are the relatively low subscription rate, 13-17%¹⁷, the high cost of the subsidy that would be required as well as resulting increases in the surcharges, and the uncertainty of the Commission's authority over many service providers. In

- Broadband is not an essential service.
- Including broadband in the definition of basic services is not feasible, as defined in SB 1712.
- Expanding the definition of basic service to include broadband does not meet the universal service standards.
- Dial-up connection provides Internet access.
- Enhancements of the CTF will promote Internet use among low-income households.

¹⁷ FCC July 2002, table 7 Report, "High-speed services for Internet Access", status as of Dec 31, 2001. Table 7 shows 928,345 DSL lines and 786,789 cable modem lines in California. FCC, Telephone Subscribership in United States, July 2001, at table 6 shows total California households of 12,086,380. Additionally, proprietary information provided by broadband providers indicates a less than 9% subscription rate per service accessible households. We estimated the 13-17% broadband subscription rate based on this proprietary information.

addition, high-speed services are not essential because currently dial-up connection provides adequate Internet service for current uses of the Internet.

B. The Commission's Cost Analysis

A broadband subsidy program for all customers is too costly.

The Commission's Telecommunications Division estimated the costs associated with providing broadband facilities throughout California. Costs associated with provisioning ISP service are excluded from estimated program costs. The actual bundled broadband service market price will likely exceed the estimated program cost because of additional ISP related expense. Using proprietary and non-proprietary data, assuming full deployment of the technology and using a 50% discount for ULTS subscribers, the calculations resulted in a ULTS rate of \$22.52 (See Attachment F). This figure includes the current ULTS basic monthly service rate of \$5.34.

The Commission took the calculations a step further and estimated the impact on universal service if broadband were included in basic service. Table 4-1 shows the results of these estimates:¹⁸

Table 4-1: Potential Cost Effects of Including Broadband in the Basic Service

Type of Service	Monthly Residential Rate Per Customer	Monthly Lifeline (ULTS) Rate Per Customer	Annual ULTS Program Costs (millions)	Monthly ULTS Surcharge on Intrastate Services
Pacific Bell BasicService Rate	\$10.69	\$5.34	\$281.7	1.45%
Pacific Bell RateWith Universal Broadband	\$45.04	\$22.52	\$982.6	3.96%
Verizon BasicService Rate	\$17.25	\$5.34	\$281.7	1.45%

¹⁸ The Universal Service program is comprised of six programs, each with its own surcharge. Table 3-1 estimates do not include quantifying the effect of expanding the definition of basic service to include broadband on one of the six programs.

Verizon RateWith Universal Broadband	\$51.60	\$22.52	\$982.6	3.96%
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Note: Estimated lifeline and residential rates for universal broadband represent a statewide average for all local exchange telephone companies.

These estimates show that implementing the changes to the definition of basic service proposed by SB 1712 would approximately quadruple the price of telecommunications service for all California customers. (See Attachment F.)

The estimated monthly prices for local telephone service with broadband of \$45.04 for Pacific Bell and \$51.60 for Verizon are less than the current prices for the two services.¹⁹ This “combined” price is lower because the cost estimates assume that every telephone customer in California is forced to subscribe and pay for broadband services and because estimated costs do not include costs associated with ISP services.

Attempts to reduce the monthly charge through use of a subsidy would simply transfer the cost of service provisioning to a surcharge -- resulting in users paying for services through surcharges rather than a monthly rate.

Including broadband service in basic telephone service may also impact related universal service programs depending on the interpretation of how the changes in the definition of basic service should affect each individual program. For example, the DDTP would likely examine whether the program could be enhanced based on the new definition to include specially designed computer equipment to access services using broadband technology. Further, the CHCF-A and -B could be further impacted if policy makers insist that the rate for residential service in rural areas be made more affordable than \$51.60 per month. In each case, program expansions resulting from including broadband service in basic service would require program budget increases and concomitant surcharge increases.

¹⁹ A combined price of \$60.69 for Pacific bell and \$67.25 for Verizon includes \$50 for DSL and purchase of basic service.

A Two-Tiered Approach would also be too expensive.

If broadband service was required to be universally available, one way to prevent telephone customers from paying for broadband service that they may not want is to offer two levels of basic service - one with and one without broadband access service. In this approach, utilities are required to make the capital investment for build out of the system to reach all customers in their service territories. The investment for each central office to be DSL capable would not be subsidized by all ratepayers, but paid for solely by customers who subscribe to the service. In lieu of higher priced broadband service, consumers could elect to subscribe to basic telephone service at current rates. However, the costs of broadband-inclusive ULTS would still be borne by all ratepayers via the current subsidy mechanism.

Below is a chart using the cost data contained in Attachment F estimating the impact of a two-tiered approach on monthly basic rates and the accompanying ULTS surcharge percentage if varying numbers of the total population of telephone customers (both ULTS participating and non-ULTS participating) subscribe to the service.

Table 4-2
Potential Cost Effects of two-tiered Approach ²⁰

Broadband	Basic Service	Basic Service	Total ULTS
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²⁰ 1. Attachment F included only start-up costs necessary to make 100% of access lines DSL-ready or it assumed 100% availability and then spread these costs over all residential customers.

2. This spreadsheet assumes only 35%, 45% and 55% (25% additional to the take rates assumption) availability and then spreads that proportion (35%-55%) of total start-up costs over those who actually subscribe. This accounts for the portion of amortized investment cost that is lumpy.

3. In addition, those non-recurring costs for the CPE, installation, etc., that are incremental to them and are hence caused by them. These costs were excluded in Attachment F.

4. This spreadsheet also includes a very rough adjustment for the 1% rural ROR-LEC customers (since TD does not have detailed data). TD assumes that 60% of total fixed cost is incremental and non-recurring and 40% is lumpy.

5. Marketing costs are excluded here also (as in Attachment F).

Subscription Rate	Broadband Rate	Broadband ULTS Rate	Surcharge
10%	\$66.44	\$33.22	2.45%
20%	\$58.15	\$29.08	3.03%
30%	\$55.38	\$27.69	3.60%

This approach results in basic monthly service rates higher than current market rates because they include the higher costs associated with providing broadband services to rural areas. If price is the main reason behind the current low subscription rate, then one can conclude that higher costs included in Table 4-2 will result in even lower subscription rates.

The existing ULTS program is based on the assumption that low-income households cannot afford the current \$10.69 statewide average rate. If that assumption is correct, it is highly unlikely that low-income households can afford even the lowest monthly broadband-included ULTS rate of \$27.69, which requires a highly speculative 30% subscription rate.

There are other issues involved with implementation of the two-tiered approach. Jurisdictional boundaries between the states and federal regulators are not clear, impacting the Commission's ability to ensure that build-out occurs as anticipated. Similarly, potential limits to current Commission jurisdiction over utility capital expenditures and rates for advanced services may inhibit its ability to assure customers of reasonable rates and subsidies. Maintaining competitive neutrality is problematic if a specific technology and provider is chosen for build-out. On the other hand, requiring subsidized deployment of all technologies is cumbersome and not very cost-effective.

Overall, the two-tiered approach merely requires those who subscribe to the service to pay for its deployment, but may result in rates so high it is likely to depress current phone subscription levels.

Furthermore, the data does not reflect the implications of the Commission's lack of

jurisdiction over Internet service providers and the resulting inability to fix ISP rates or limit overall bundled broadband/ISP price increases that may occur in the future. If broadband becomes an element of basic service, this limited ability to control overall prices is a significant concern for implementing the right surcharges. If prices for broadband service drop after the Commission has set a statewide average rate for basic service, customers end up paying more for the service than is necessary. And, ratepayers would be funding inflated ULTS surcharge subsidies. Of equal concern is that once broadband is considered an element of basic service, ISPs may have an incentive to increase prices for the service, affecting the monthly basic service rates. Again, non-ULTS participant ratepayers would be impacted by an attendant increase in surcharge subsidies.

Low-income broadband access subsidy program

Another option for increasing access to the Internet is establishing a Low-Income Broadband Access Subsidy program (LIBAS). LIBAS would not subsidize the capital investment required to reach all customers in the service territories of local phone companies, but it would provide a subsidy to low-income customers in areas where broadband service is already available. To address the competitive neutrality issue, the subsidy would be available for bundled services from all providers who register with the Commission to participate in the program. The table below illustrates the impact on the ULTS program of a 50% subsidy for a monthly broadband retail price of \$50.00.

Table 4-3
Potential Cost Effects of LIBAS Approach

LIBAS Subscription Rate (1)	LIBAS Monthly Voucher Subsidy	ULTS Annual Costs with LIBAS	ULTS Surcharge with LIBAS	Percent Increase from Current 1.45% ULTS Surcharge
10% (340,000)	\$25.00	\$383.7 (Million)	2.53%	74%
50% (1.7 million)	\$25.00	\$791.7 (Million)	5.22%	259%
100% (3.4 million)	\$25.00	\$1.3 (Billion)	8.57%	491%

(1) Percent of total ULTS subscribers

(2) Does not include the \$5.34 basic service rate. Total ULTS subscriber cost would be \$30.34

The \$25.00 subsidy still requires ULTS customers to pay \$25.00, assuming the cost of broadband service is \$50.00 per month. As with other options, it is likely that most ULTS customers cannot afford such service even with a 50% subsidy. The impact of the LIBAS program on other ratepayers is a dramatic increase in the ULTS surcharge.

C. Including Broadband In The Definition Of Basic Services Is Not Feasible, As Defined In SB 1712.

In SB 1712, the Legislature directed the Commission to open a proceeding to investigate the feasibility of redefining universal telephone service by incorporating broadband as a component of basic service. The Legislature defined “feasibility” as technological and competitive neutrality, funding that is equitably distributed, and benefits that justify costs. Expanding the Universal Service definition of basic service to include broadband services is not feasible under this definition.

Technological and competitive neutrality would be difficult to achieve.

Achieving technological and competitive neutrality would be extremely difficult due to the different systems that provide broadband services. Technological and competitive neutrality would require that any mandate to make one form of broadband available to all customers should apply to all forms of broadband. The currently available technology used to supply broadband services includes telephone lines, cable television lines, and wireless- and satellite-based technologies. The scope of Commission authority over these types of technologies varies. Any form of technologically neutral support for broadband under the Universal Service program would require that the Commission obtain regulatory oversight over all of the various technologies that provide broadband.

Funding is not equitably distributed.

The scope of the Commission's jurisdiction also determines whether the funding burden can be equitably distributed. Most DSL services are now deemed to be interstate services and are therefore not subject to intrastate surcharges. Absent the ability to include broadband services in the base of services subject to the surcharges, the Commission is unable to equitably distribute the costs of DSL services.

Benefits do not justify costs.

As discussed above, the implementation of SB 1712 would produce extremely high costs to consumers, both in the form of sharply higher prices to pay for the expanded scope of basic service, and in the form of significantly higher surcharges on customer bills. As noted, these higher costs could have the unintended consequence of forcing some customers to relinquish their telephone service. Even the low-income customers who would be the intended beneficiaries of such a change would need to pay significantly more in order to take advantage of the newly defined universal service.

While the costs of expanding universal service would be high, the benefits would not be nearly as great. As previously noted, studies show that the most popular activities of broadband and dial-up Internet users are the same: e-mail, gathering information, and instant messaging. Dial-up access enables consumers to take advantage of these uses of the Internet.

In sum, the limited benefits of expanding universal service to include broadband do not outweigh the considerable costs. Instead, as we discuss below, at this time, investments in less costly alternatives, such as the CTF program appear prudent.

In conclusion, the statutory definition of feasibility set forth in SB 1712 is not met, and consequently, the definition of basic service should not be expanded to include broadband at this time.

D. Expanding the Definition of Basic Service to Include

Broadband Does Not Meet The Commission's Universal Service Standards

1. The first requirement is that the service be essential for participation in society. As described above, while 73% of California households have access to broadband, only about 13-17% have chosen to subscribe to some form of broadband service. A service to which more than 80% of California households do not subscribe is not "essential."

2. The next standard requires a substantial majority, 65%, of residential households to subscribe to the service.

In considering this standard, we evaluate: (1) availability of the service; (2) the degree to which the service has been promoted by the carrier; (3) the level of customer education which has been provided for the service; and (4) the range of the communities which are presently being targeted for marketing and use of the service. As most Californians confirm, DSL and broadband services have been widely advertised. Nevertheless, subscription rates remain about 13-17% -- far below the required 65%.

3. The next standard is whether the qualitative and quantitative benefits of adding the service outweigh the costs. As explained above, the benefits fall far short of the costs.
4. The final standard considers whether the service is or will be sufficiently available, such that the number of subscribers would not increase without intervention. This standard presupposes a well-developed market for an essential service used by a significant majority of residential consumers. Such is simply not the case with broadband. About 13-17% of residential customers

Broadband does not meet the Commission's requirements for basic service because:

It is not essential – subscription rates are 13-17%.

Benefits of speedier access do not outweigh costs, which disproportionately impact low-income customers.

Market not sufficiently established to determine whether intervention is needed.

having a choice use the service. New service providers continue to appear, with different technologies competing as well.

E. Dial-up Connection Provides Internet Access

The key to promoting broadband services in California is to keep telephone service affordable and to promote Internet access within low-income households.

More than half of U.S. households are now online and 80% of these households use dial-up connection.

High-speed Internet access service is now available to almost 75% to 80% ²¹of all homes in the U.S. via DSL or cable modem service, but only 11% of individuals use broadband services.²² In California, while 73% of California households have access to broadband services; only 13-17% have chosen to subscribe to them.

According to a Parks Associates²³ Survey of 2,500 U.S. households done in July 2001, almost 75% of dial-up Internet subscribers in the nation are content with the quality of their Internet service. These dial-up loyalists use the Internet mainly for e-mail and some Web surfing.

They may need more exposure to broadband's benefits before they will consider switching. Research has shown that once the switch is made, there is a noticeable

Dial-up Connection provides Internet Access

- More than half of U.S. households are now online and 80% of these households use dial-up connection.
- High-speed Internet access service is now available to almost 75% to 80% of all homes in the U.S. via DSL or cable modem service, but only 11% of individuals use broadband services.
- While 73% of Californians have access to broadband services; only 13-17% have chosen to subscribe to them.
- California has a 97% phone penetration rate, so 97% of Californians could access the Internet via dial-up connection.
- The key to promoting future broadband use in California is to keep telephone service affordable and to promote Internet access within low-income households.

²¹ See Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, Internet Over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, GN Docket No. 00-185, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, FCC 02-77 (rel. March 15, 2002) at para. 9 ("cable Declaratory Ruling") and Third 706 Report at para. 28.

²² "A Nation on Line", NTIA/ESA Report, February 2002.

²³ <http://www.parksassociates.com/>, survey of 2,500 U.S. households done in July 2001.

difference in consumer Internet use.²⁴ There are three major ways in which broadband users distinguish themselves from their dial-up counterparts. For high-speed home users, broadband lets them use the Internet to:

- Become creators and managers of online content;
- Satisfy a wide range of queries for information, and;
- Engage in multiple Internet activities on a daily basis.²⁵

According to Parks Associates' director of broadband research, most of the new broadband subscribers in the next few years will be those households currently using dial-up Internet. As mentioned earlier, California has a 97% telephone subscription rate²⁶, so 97% of California households could access the Internet via dial-up connection.²⁷ Therefore, the key to promoting future broadband users in California is to keep telephone service affordable and to promote Internet access via programs such as the CTF.

The Commission is expanding basic phone service to unserved and underserved communities.

Currently, the Commission is implementing the following programs to expand basic telecommunications services to unserved and underserved communities.

Rural Telecommunications Infrastructure Grants

Commission staff is working to finalize program elements for implementation of Assembly Bill (AB) 140 (Strom-Martin). AB 140 created a new program funded by up to \$10 million per year via the California High Cost Funds A & B for the purpose of

²⁴ According to research by Jupiter Media Metrix, www.jmm.com.

²⁵ "The Broadband Difference" *How online Americans' behavior changes with high-speed Internet connections at home*, John B. Horrigan and Lee Rainie, Pew Internet & American Life Project.

²⁶ "Telephone Subscribership in the United States", Alexander Belinfante, Federal Communications Commission, February 2002.

²⁷ <http://www.parksassociates.com/>, survey of 2,500 U.S. households done in July 2001

building telecommunications infrastructure in currently unserved, rural, low-income communities in California. The program requires that grant applicants explore all available technologies for bringing telecommunications service to their area.

Communities who receive grants to build telecommunications infrastructure may also be gaining access to the Internet. The Commission anticipates final program criteria to be adopted in late 2002.

ULTS Outreach

The Commission is also currently working on two initiatives to greatly enhance the public's access to basic telephone service. The purpose of these initiatives is to reach out to residents in underserved communities throughout the state who are eligible for ULTS but not now using it and inform them about the ULTS program.

One initiative provides approximately \$500,000 a year for three years for the operation of a Call Center. The public will be able to reach the Call Center via toll-free numbers and receive information --in 8 different languages--about the ULTS program and its eligibility requirements. The Call Center will also refer eligible customers to telephone companies that serve in the customer's area.

The second initiative provides approximately \$5 million to fund outreach. A portion of funds will support advertising campaigns to provide residents in identified underserved communities with information about the ULTS program and the availability of the Call Center. The remaining portion will furnish funds to specific community based organizations (CBOs) to perform outreach within their represented community to inform ULTS eligible residents about the program. Some CBOs may be equipped to provide direct services for the public and others will direct the public to the Call Center. Department of General Services approval of the contracts that support these initiatives is anticipated in August or September 2002. Program operation will commence immediately following their approval.

F. Enhancement of CTF Promotes Internet Use Among Low-Income Households.

Getting on line requires more than just a service connection, whether or not it is high-speed. A modem and computer are necessary equipment but training in how to use the equipment is equally important. For this reason, locations where the public can access the Internet can be especially useful in getting first time users on line.

In California, schools and libraries currently offer low and no-cost Internet access to the public. The Commission's universal service programs provide assistance for these efforts through the CTF. The CTF also provides some discounted telecommunications services to CBOs and hospitals.

The Universal Service Decision established CTF.

In Re Universal Service and Compliance with the Mandates of Assembly Bill 3643, (1996) 68 CPUC 2d 524, 571, (D.96-10-066), the Commission created the CTF. The Commission ordered all local carriers to provide schools, libraries, and health care facilities, with discounted services to access Internet. However, CBOs receive discounts on fewer services than schools, libraries, and health care facilities. The discounts ranged from 20% for municipal hospitals, to 25% for qualifying CBOs, to 50% for public nonprofit schools and libraries. To fund the discount, the Universal Service Decision imposed a CTF surcharge on all end users (except for ULTS customers) of intrastate telecommunications service. The funds collected via the surcharge are deposited in the state treasury. Carriers supplying telecommunications services to qualifying institutions and organizations at discounted rates file reimbursement requests with the Commission. The Commission calculates each carrier's support from the CTF and distributes the appropriate amount to the carriers.

The Commission established these discounts to further the goal of making education, health care, community, and government institutions "early recipients of the benefits of the information age" due to the economic and social impact of these entities. The

Commission also felt that the CTF was an important strategy for fostering development of a state-of-the art telecommunications infrastructure for California.

On July 12, 2001 the Commission made several changes to the CTF²⁸. Among those changes the Commission established the CTF budget for FY 2002 to 2003. One important change to the budget was the deletion of the 5% set aside for government owned hospitals and clinics, and Community Based Organizations (CBOs). The Commission reasoned that since hospitals, clinics, and CBOs had under-utilized these funds it was better to allow schools and libraries to receive the unused funds.

The Commission also set deadlines²⁹ for carriers to submit requests for reimbursements to the CTF administrator. The administrator had reported that many carriers were substantially behind - up to 3 years - in submitting requests for reimbursements. To provide for these anticipated requests, the administrator needed to carry over funds from year to year. The deadlines were established to give the administrator some finality regarding reimbursement requests.

The CTF provides for discounted telecommunications services, and a current surcharge of 0.30% on all other customers intrastate billings to reimburse carriers that provide the discounted services:

Table 4-4: CTF Discount for Different Customer Groups

Recipients	Discount	FY 2002-03 Amounts ³⁰
Public Schools and Libraries	50%	\$53,200,000
Municipal and County Owned Hospitals	20%	\$ 100,000

²⁸ Resolution T-16542

²⁹ The time limits or sunset adopted in Resolution T-16542 are: (a) a two-year period from the due date for January 2000 and thereafter CTF claims; (b) October 12, 2001 for February 1997 through December 1997 CTF claims; and (c) February 4, 2002 for January 1998 through June 1999 CTF claims; and (d) March 4, 2002 for July 1999 through December 1999 CTF claims.

³⁰ See Attachment D. The amounts are based on historical numbers of approved applications, but CTF funds are available on a first-come first-served basis to qualified applicants.

Community Based Organizations	25%	\$ 500,000
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The Commission is considering the expansion of CTF.

As noted above, the discounts offered, and types and quantities of eligible services vary among the CTF recipients. As part of its consideration of SB 1712, the Commission also sought suggestions for revisions to the CTF. As a result of these suggestions, the Commission is considering expanding the services, quantities, and discounts available to bring all groups into parity.

Assigned Commissioner to the SB 1712 rulemaking, Geoffrey F. Brown, having heard the comments from the public, intends to bring before the Commission a proposal to expand CTF. In light of the possibility that the disparate levels of discounts - 20% for hospitals, 25% for CBOs, and 50% for schools and libraries – may played a role in the low level of participation by hospitals and CBOs, the proposal will allow each group to obtain not only the same discount level, but also to have access to the same types and quantities of services at a discount. A draft decision presenting this proposal is expected to be available for Commission consideration in fall 2002.

CHAPTER 5

Conclusions and Recommendations

The Internet and advanced communication technologies and services play an important role in social and economic development in our society.

All Californians benefit from the elimination of economic, technical, and educational barriers that limit an individual's ability to access and use these emerging technologies. The Commission will continue to exercise its authority to ensure basic telephone service is available and affordable for all Californians. The success of the Commission's efforts can be measured by the 97% of California households who regardless of income, education, and ethnicity, have a telephone connection and therefore the ability to access Internet via dial-up.

Interested parties throughout California submitted comments and suggestions. These parties provided substantial, well-researched comments to supplement our own information and analysis. As discussed above, broadband services do not satisfy the feasibility standards found in SB 1712, nor do they meet the Commission's standards for changing the definition of basic. Thus, we conclude that broadband services are not essential at this time.

The rationale for this conclusion is grounded largely in the low rate of subscription to broadband services and the additional costs to the universal service programs, especially the Lifeline program, if at this time the definition of basic service is expanded to include broadband service. Such expansion has the potential to cause

Conclusions and Recommendations

Broadband Internet access does not satisfy the feasibility standards contained in SB 1712 nor the Commission's current standards for expanding the definition of basic service.

A broadband subsidy program is too costly.

Broadband Internet access are not essential because currently dial-up connection provides adequate Internet service for basic uses of the Internet.

73% of Californians have access to broadband; however, only 13-17% subscribe to this service.

Low cost basic telephone service is one important element within the Commission's jurisdiction for maintaining and increasing access to the Internet for low income Californians.

The Commission should maintain its commitment to keeping basic telephone service as affordable as possible.

The Commission will consider in Fall 2002, an order that directs enhancements to improve utilization of the CTF program.

the unintended consequence of reducing low-income customers' ability to afford basic telephone service and dial-up Internet services.

This conclusion is also justified by the structure of the universal service programs. The definition of basic service determines which services must be offered to all customers, and consequently, which services are eligible for subsidy, particularly via the Lifeline and High Cost funds. Elements of basic service are not optional; the Commission intended these elements to be a "minimum" level of service. All customers, regardless of interest, must receive and must pay for "basic service." Similarly, all customers ineligible to participate in the programs must subsidize provision of all basic services to all participating customers. The proposed changes could have the effect of requiring carriers to make broadband services available, at great expense, to customers who do not necessarily want broadband. Moreover, such a program is inequitable given that many ratepayers would fund a costly service to which they themselves do not subscribe.

Low cost basic telephone service is key to maintaining and increasing access to the Internet for all Californians. Most on line Californians, regardless of income level, use dial-up services as their means to access the Internet. Basic telephone service is required for this access. Persons that cannot afford basic telephone service are denied this form of access, as well as essential telephone communication. The Commission should maintain its commitment to keeping basic telephone service as affordable as possible.

For all these reasons, the standards in Pub. Utilities. Code § 871.7(d) are not satisfied, and therefore, incorporation of broadband into the definition of basic service is not feasible at this time.

Many programs successfully offer underserved communities access to the Internet through publicly available computers and Internet connections. The CTF assists schools, libraries, and other sites in offering these programs by reducing the costs of

telecommunications services. The Commission will consider enhancements to improve utilization of the CTF program by expanding the services, quantities and discounts available to bring all program groups into parity. The Commission will consider a proposal to enhance the CTF in Fall 2002.

ATTACHMENT A

Elements of Basic Service Components

BASIC SERVICE

- A. Carriers providing local exchange residential service shall, at a minimum, provide all elements of basic service, except as provided for in Rule 4.C. below.
- B. Basic service includes the following service elements:
1. access to single party local exchange service;
 2. access to all interexchange carriers offering service to customers in a local exchange.
 3. ability to place calls;
 4. ability to receive free unlimited incoming calls;
 5. free touch tone dialing;
 6. free and unlimited access to 911/E911;
 7. access to local directory assistance, and access to foreign NPAs;
 8. Lifeline rates and charges for eligible customers;
 9. customer choice of flat or measured rate service;
 10. free provision of one directory listing per year as provided for in D.96-02-072;
 11. free white pages telephone directory;
 12. access to operator services; [*461]
 13. voice grade connection to public switched telephone network;
 14. free access to 800 or 800-like toll free services;
 15. one-time free blocking for information services and one time billing adjustments for charges incurred inadvertently, mistakenly, or that were unauthorized;
 16. access to telephone relay service as provided for in PU Code § 2881;
 17. free access to customer service for information about ULTS, service activation, service termination, service repair and bill inquiries.
 18. free access to CRS via the 711 abbreviated dialing code³¹
- C. The seventeen smaller LECs shall be exempted from the basic service element that they be required to offer customers the choice of flat or measured rate service, unless the smaller LECs currently offer that option.

(END OF ATTACHMENT A)

³¹ Added by Resolution T-16546 August 23, 2001

ATTACHMENT B

SB 1712, Ch. 943 Stats. 2000

Page 1

An act to add Sections 871.7 and 883 to the Public Utilities Code, relating to public utilities.

LEGISLATIVE COUNSEL'S DIGEST

SB 1712, Polanco. Universal telephone service.

The Moore Universal Telephone Service Act requires the Public Utilities Commission to establish a class of Lifeline service necessary to meet minimum residential communications needs and establish rates and charges for that service.

This bill would require the commission, on or before February 1, 2001, to initiate an investigation to examine the current and future definitions of universal service, seeking input from a wide cross section of providers, users, state agencies, and convergent industries and reporting findings and recommendations, consistent with specified principles, to the Legislature. The bill would make related legislative findings and declarations.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 871.7 is added to the Public Utilities Code, to read:

871.7. The Legislature finds and declares all of the following:

(a) The Moore Universal Telephone Service Act, enacted in 1987, was intended to offer high quality basic telephone service at affordable rates to the greatest number of California residents, and has become an important means of achieving universal service by making residential service affordable to low-income citizens through the creation of a lifeline class of service.

(b) Factors such as competition and technological innovation are resulting in the convergence of a variety of telecommunications technologies offering an expanded range of telecommunications services to users that incorporate voice, video, and data. These technologies have differing regulatory regimes and jurisdictions.

(c) It is the intent of the Legislature that the commission initiate a proceeding investigating the feasibility of redefining universal telephone service by incorporating two-way voice, video, and data service as components of basic service. It is the Legislature's further intent that, to the extent that the incorporation is feasible, that it promote equity of access to high-speed communications networks, the Internet, and other services to the extent that those services provide social benefits that include all of the following:

(1) Improving the quality of life among the residents of California.

(2) Expanding access to public and private resources for education, training, and commerce.

ATTACHMENT B

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(3) Increasing access to public resources enhancing public health and safety.

(4) Assisting in bridging the "digital divide" through expanded access to new technologies by low-income, disabled, or otherwise disadvantaged Californians.

(5) Shifting traffic patterns by enabling telecommuting, thereby helping to improve air quality in all areas of the state and mitigating the need for highway expansion.

(d) For purposes of this section, the term "feasibility" means consistency with all of the following:

(1) Technological and competitive neutrality.

(2) Equitable distribution of the funding burden for redefined universal service as described in subdivision ©, among all affected consumers and industries, thereby ensuring that regulated utilities' ratepayers do not bear a disproportionate share of funding responsibility.

(3) Benefits that justify the costs.

SEC. 2. Section 883 is added to the Public Utilities Code, to read:

883. (a) The commission shall, on or before February 1, 2001, issue an order initiating an investigation and opening a proceeding to examine the current and future definitions of universal service. That proceeding shall include public hearings that encourage participation by a broad and diverse range of interests from all areas of the state, including, but not limited to, all of the following:

(1) Consumer groups.

(2) Communication service providers, including all providers of high-speed access services.

(3) Facilities-based telephone providers.

(4) Information service providers and Internet access providers.

(5) Rural and urban users.

(6) Public interest groups.

(7) Representatives of small and large businesses and industry.

(8) Local agencies.

(9) State agencies, including, but not limited to, all of the following:

(A) The Trade and Commerce Agency.

(B) The Business, Transportation and Housing Agency.

(C) The State and Consumer Services Agency.

(D) The Department of Information Technology.

(E) The State Department of Education.

(F) The State Department of Health Services.

(G) The California State Library.

(10) Colleges and universities.

(b) The objectives of the proceeding set forth in subdivision (a) shall include all of the following:

(1) To investigate the feasibility of redefining universal service in light of current trends toward accelerated convergence of voice, video, and data, with an emphasis on the role of basic telecommunications and Internet services in the workplace, in education and workforce training, access to health care, and increased public safety.

ATTACHMENT B

Page 3

(2) To evaluate the extent to which technological changes have reduced the relevance of existing regulatory regimes given their current segmentation based upon technology.

(3) To receive broad-based input from a cross section of interested parties and make recommendations on whether video, data, and Internet service providers should be incorporated into an enhanced Universal Lifeline Service program, as specified, including relevant policy recommendations regarding regulatory and statutory changes and funding options that are consistent with the principles set forth in subdivision © of Section 871.7.

(4) To reevaluate prior definitions of basic service in a manner that will, to the extent feasible, effectively incorporate the latest technologies to provide all California residents with all of the following:

(A) Improved quality of life.

(B) Expanded access to public and private resources for education, training, and commerce.

(C) Increased access to public resources enhancing public health and safety.

(D) Assistance in bridging the "digital divide" through expanded access to new technologies by low income, disabled, or otherwise disadvantaged Californians.

(5) To assess projected costs of providing enhanced universal lifeline service in accordance with the intent of this article, and to delineate the subsidy support needed to maintain the redefined scope of universal service in a competitive market.

(6) To design and recommend an equitable and broad-based subsidy support mechanism for universal service in competitive markets in a manner that conforms with subdivision © of Section 871.7.

(7) To develop a process to periodically review and revise the definition of universal service to reflect new technologies and markets consistent with subdivision © of Section 871.7.

(8) To consider whether similar regulatory treatment for the provision of similar services is appropriate and feasible.

(c) In conducting its investigation, the commission shall take into account the role played by a number of diverse but convergent industries and providers, even though many of these entities are not subject to economic regulation by the commission or any other Government entity.

(d) The recommendations of the commission shall be consistent with state policies for telecommunications as set forth in Section 709, and with all of the following principles:

(1) Universal service shall, to the extent feasible, be provided at affordable prices regardless of linguistic, cultural, ethnic, physical, financial, and geographic considerations.

(2) Consumers shall be provided access to all information needed to allow timely and informed choices about telecommunications products and services that are part of the universal service program and how best to use them.

ATTACHMENT B

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(3) Education, health care, community, and government institutions shall be positioned as early recipients of new and emerging technologies so as to maximize the economic and social benefits of these services.

(e) The commission shall complete its investigation and report to the Legislature its findings and recommendations on or before January 1, 2002.

(END OF ATTACHMENT B)

ATTACHMENT C

Questions For Public Comment

Page 1

1. To what extent should the definition of universal service be modified to include digital access services, which allow the convergence of voice, video and data services? In addressing this, consider the role of basic telecommunications and Internet services in the workplace, in education and workforce training, access to health care, and increased public safety. (§ 883(b)(1))
 - a. Address the “feasibility” of any proposed change to the definition of universal service, as that term is defined in Section 871.7(d), including whether the benefits justify the costs and whether the funding burden can be equitably distributed so as to prevent regulated utility ratepayers from bearing a disproportionate share of funding responsibility.
 - b. What additional criteria should be used to determine the nature and definition of universal service?
2. To what extent have competition and advances in technology reduced the relevance of existing regulatory regimes given their current segmentation based upon technology? (§ 883(b)(2))
3. Should video, data, and Internet services be incorporated into an enhanced Universal Lifeline Service program? This should be addressed in the context of regulatory and statutory changes and funding options that are consistent with the principles set forth in Section 871.7©. (§ 883(b)(3))
 - a. How should the Commission regulate video, data, voice over IP and Internet providers providing services included as part of an enhanced Universal Lifeline Service Program? What regulatory and legislative changes are needed at a state and/or federal level?

ATTACHMENT C

Page 2

- b. How would the Commission regulate and audit payments made to providers of video, data, and Internet services under an enhanced Universal Lifeline Service program?
 - c. Address the “feasibility” of implementing an enhanced Universal Lifeline Service Program, as that term is defined in Section 871.7(d).
4. To what extent should the definition of basic service be modified to incorporate the latest technologies? (§ 883(b)(4)) Consideration should be given to how this would impact California residents with respect to:
- a. Improved quality of life.
 - b. Expanded access to public and private resources for education, training, and commerce.
 - c. Increased access to public resources enhancing public health and safety.
 - d. Assistance in bridging the “digital divide” through expanded access to new technologies by low income, disabled, or otherwise disadvantaged Californians.
 - e. What criteria should be used to determine whether and how the definition of basic service should be modified? Do the criteria set forth in D.96-10-066, Appendix B, Rule D, provide a useful analytical framework for making this determination?
 - f. Address the “feasibility” of modifying the definition of basic service to incorporate the latest technologies, as that term is used in Section 871.7(d).

ATTACHMENT C

Page 3

5. Should the CPUC find that it is not appropriate at this time to modify the basic service definition, what alternatives exist to promote Items 4.a through 4.f.
6. What is the projected cost of providing a redefined universal service? (§ 883(b)(5))
 - a. How should the Commission estimate the projected cost of providing enhanced universal service?
 - b. How should the Commission delineate the subsidy support needed to maintain the redefined scope of universal service in a competitive market?
7. What is the projected cost of providing enhanced Universal Lifeline Service?¹ (§ 883(b)(5))
 - a. How should the Commission estimate the projected cost of providing enhanced Universal Lifeline Service?
 - b. How should the Commission delineate the subsidy support needed to maintain the redefined scope of Universal Lifeline Service in a competitive market?
8. If any changes to the definition of universal service or the scope of Lifeline service are proposed, do these changes necessitate any modifications to the Commission's current support mechanisms for universal service? (§ 883(b)(6))

¹ In Resolution T-16435, the Commission projected there would be more than 3.7 million lifeline customers during 2001.

ATTACHMENT C

Page 4

9. Should the California Teleconnect program be revised? If so, how?
 - a. What is the projected cost of the revised California Teleconnect program? How should the Commission assess the projected cost of a revised California Teleconnect program.
 - b. How should the Commission design and structure an equitable and broad-based subsidy support mechanism for a revised California Teleconnect program?
10. What process and procedures should the Commission adopt to periodically review and revise the definition of universal service, as necessary, to reflect new technologies and markets consistent with the intent of Section 871.7©. (§ 883(b)(7))
11. Is it appropriate and feasible to have similar regulatory treatment for the provision of similar service? (§ 883(b)(8))
 - a. What criteria should be used to determine when it is appropriate and feasible to have similar regulatory treatment for similar services?
 - b. Is it appropriate and feasible to have the same regulatory treatment for all services included within a revised definition of basic service, regardless of the type of carrier or technology used to deliver the service?
 - c. Is it appropriate and feasible to have the same regulatory treatment for all services included within the redefined universal service, regardless of the type of carrier or technology used to deliver the service?
 - d. Is it appropriate and feasible to have the same regulatory treatment for all services included within an enhanced Universal Lifeline Service, regardless of the type of carrier or technology used to deliver the service?
12. How should the Commission evaluate whether the projected costs of the enhanced programs are excessive or reasonable?

ATTACHMENT C

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13. Are there alternatives to revising the basic service definition at this time that can achieve the enhanced service objectives at lower cost?
14. When is it appropriate to provide subsidies for “digital services” when individuals who may be subject to both “digital” universal service and lifeline program funding fees are not themselves subscribers to, or beneficiaries of the digital service?
15. Is access to digital services essential? Why? If not essential now, under what conditions should access to digital services be considered essential?
16. How much digital bandwidth access is essential?
17. Should the Commission reprioritize the use of available universal services subsidies? For example, should subsidies for digital access services take precedence over the significant percentage of California territory not served by any phone?
18. Is dial-up modem access to digital services (Internet) essential?
19. Is wireless phone service access to digital services (Internet) essential?
20. What should the Commission consider in determining whether wired or wireless digital service is essential?
21. Have the current Universal Service, Lifeline, and/or Teleconnect programs achieved their goals? Are the goals changing?
22. If program Universal Service, Lifeline, and/or Teleconnect Program goals are changing, what alternatives exist to achieve the new goals?

(END OF ATTACHMENT C)

ATTACHMENT D

California Teleconnect Fund Administrative Committee Fund

CALIFORNIA TELECONNECT FUND ADMINISTRATIVE COMMITTEE FUND		
RECIPIENTS	DISCOUNTS	FISCAL YEAR 2002-2003 ADOPTED DISCOUNT AMOUNTS
Schools/Libraries	50%	\$53,200,000
Hospitals/Clinics	20%	\$100,000
CBO's	25%	\$500,000

Notes:

- (1) The adopted budget for claim payments for FY 2002-2003 total \$53.8 million.
- (2) \$53.8 million was estimated based on the historical approved discount amounts for qualified entities.
- (3) The percentage distribution for the different entities is based on the historical number of approved application received from the qualified entities. It does not indicate funding limits.
- (4) For FY 2002-2003, CTF funds are available on a first come first served basis. Thus, the budget amount of \$53.8 million will be given to qualified applicants who applied first.

(END OF ATTACHMENT D)

ATTACHMENT E

Parties that filed comments and/or reply comments

Office of Ratepayer Advocates (ORA)

Cox California Telcom, LLC, dba Cox Communications (Cox)

Worldcom, Inc, (Worldcom)

California Cable Television Association (CCTA)

AT&T Wireless Services, Inc. (AT&T Wireless)

AT&T Communications of California, Inc. (AT&T)

Community Technology Policy Council (CTPC)

National Council of La Raza, Southern Christian Leadership Conference of Greater Los Angeles, and California Rural Indian Health Board (La Raza)

California Association of the Deaf (CAD)

Alliance for Technology Access, The Great Valley Center and Mission Language Vocational School (Alliance)

Latino Issues Forum/Greenlining Institute (LIF)

Verizon California, Inc. (Verizon)

Roseville Telephone Company (Roseville)

Citizens Telecommunications Company of California, Inc., Citizens Telecommunications Company of the Golden State, Citizens Telecommunications Company of Tuolumne, Citizens Telecommunications Company, and Electric Lightwave, Inc. (Citizens),

Deaf and Disabled Telecommunications Program Administrative Committee (DDTPAC)

Qwest Communications Corporation (Qwest)

Calaveras Telephone Company, Cal-Ore Telephone Company, Ducor Telephone Company, Evans Telephone Company, Foresthill Telephone Company, Happy Valley Telephone Company, Hornitos Telephone Company, Kerman Telephone Company, Pinnacles Telephone Company, The Ponderosa Telephone Company, Sierra Telephone Company, Inc., The Siskiyou Telephone Company, The Volcano Telephone Company, Winterhaven Telephone Company, (Small LECs)

The Utility Reform Network (TURN)

Pacific Bell Telephone Company (Pacific Bell)

XO California, Inc.

(END ATTACHMENT E)

ATTACHMENT F

Costs Of Deploying Enhanced Basic Service

The Telecommunications Division (TD) at the California Public Utilities Commission (CPUC) has developed preliminary estimates of the average incremental costs of overlay Digital Subscriber Line (DSL) technology.² The focus of the cost analysis was to calculate the average cost per access line of DSL deployment in the ‘last mile’³, to upgrade existing loops⁴ of all Incumbent Local Exchange Carriers (ILECs) in California including those in rural areas.⁵

Methodology and Assumptions

The methodology can be summarized in the following steps. The data sources and related assumptions in arriving at the estimates are also explained below:

1. **Data Collection and Analysis:** Estimates of average costs per access line were collected from both the large and mid-size ILECs regulated under the new regulatory framework (NRF-LECs) and from the small rural ILECs regulated under traditional rate of return (ROR-LECs) regulation. Estimates of fixed costs per access line were collected separately for areas within 18 kilo-feet of an exchange and for areas beyond 18 kilo-feet of an exchange. These estimates came from proprietary as well as public sources. Multiplying these cost

² The purpose was to ascertain the impact of subsidizing such costs on existing Universal Service subsidy programs and hence DSL technology was chosen.

³ “The last mile is a critical link between existing backbone and middle mile infrastructure on the one hand and the last 100 feet to the end-user’s terminal on the other hand” per FCC Report and Order in, “*Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment pursuant to Section 706 of the Telecommunications Act of 1996*” SECOND REPORT, FCC 00-290. CC Docket No. 98-146. pp.11

⁴ The Universal Service programs subsidize local loops of California ILECS

⁵ AB 140 would subsidize the extension of phone service to these areas according to Ed Fletcher in “Getting connected gets easier: A new law aims to help rural areas bring in wired phone service”

Footnote continued on next page

estimates by the appropriate number of access lines would yield the total weighted average fixed cost per access line of deploying DSL. TD relied on the most recent FCC publications for data on access lines. The total number of California access lines (existing and potential) was estimated to be approximately 25 million as of 2001.⁶ Approximately 1% of these access lines are for rural ROR-LECs.⁷ Approximately 60% of the access lines (around 15 million) are residential.⁸ Similarly based on data submitted to TD by NRF-LECs, TD assumed that approximately 70% of DSL customers are within 18 kilo feet of exchanges and 30% are beyond 18 kilo feet of an exchange and are hence reached through additional investment in remote terminals closer to their households.

2. **Cost Estimates:** The final conservative range of retail⁹ cost estimates per access line on a start-up and on a recurring cost basis and the corresponding proportions or weights are tabulated below in Table F-1.

Table F-1: Start-up and Recurring Cost Estimates Per Access Line

Reasonable range of costs	For price-cap/ NRF regulated ILECs ¹⁰ (99% of access lines)	For ROR regulated rural ILECs ¹¹ (1% of access lines)
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Sacramento Be January 1, 2002

⁶ FCC, Industry Analysis Division, *Local Telephone Competition: Status as of December 31, 2000*. Report released in August 2001 and updated until December 2001 in July 2002.

⁷ Ibid. In this publication, the FCC identifies the access lines of price cap and non price cap regulated ILECs separately.

⁸ FCC 43-08 (ARMIS Report): Table III. Access Lines in Service by Customer

⁹ The cost averages over business and residential access lines and therefore we could multiply by the appropriate number of access lines (business and residential) to get the break-up of costs.

¹⁰ These estimates are based on current proprietary data submitted by ILECs and CLECs to the CPUC. A tutorial at the International Engineering Consortium's website provides an alternate source. See Table 1 at <http://www.iec.org/online/tutorials/dslam/topic05.html>

¹¹ These estimates are based on the NECA Rural Broadband Cost Study published by the National Exchange Carrier Association. Summary results are available at <http://www.neca.org/bbattach.pdf>.

Start-up Costs	Within 18kft of the exchange (70% weight)	\$200 to \$240	\$485 to \$500
	Beyond 18 kft of the exchange (30% weight)	\$500 to \$510	\$4,121 to \$9328
Recurring Costs		\$15 to \$25¹²	

These ranges should be taken with the caveats that (a) they may not include marketing costs and some non recurring costs related to ordering, customer premises equipment and installation fee waivers that are not directly related to making an access line 'DSL-ready'¹³. (b) These estimates also may not reflect least cost technologies.¹⁴ (c) These estimates assume that none of the costs of deployment have already been recovered from ratepayers. The final cost estimates are based on assuming weighted average fixed start-up costs of \$441 per access line for the first year and annual variable costs per access line of \$240 for subsequent years. The costs were estimated from a weighted average of the cost per access line estimates presented in table F-1 above. The estimated total annual program cost for provisioning all residential lines with ADSL is around \$5.3 billion annually for the next five years (distributing fixed costs over next five years).

¹² Based on proprietary and non-proprietary data sources.

¹³ The estimates assume that if DSL becomes a part of basic service, there will be very little competition. The estimates are net of marketing, interconnection and promotional costs, including costs of ordering customer premises equipment and installation fee waivers.

¹⁴ Technical experts in the Industry now claim that new architectures such as the BLC (broadband loop carrier) would drive down incremental costs of new loops even further. See the Technical Report published by DSL Forum. "*DSL Anywhere: A paper designed to provide options for Service Providers to extend the reach of DSL into previously un-served areas*". 2000; and also SBC's description of Project pronto on its website <http://www.sbc.com/data/network/0,2951,5,00.html>

Please also note that studies that have included estimates for the middle mile and technologies other than DSL in the last mile have estimates in the range of \$1110 per access line. See Gartner Consulting. Link Michigan. E3 Ventures for the Michigan Economic Development Corporation. November 2001.

3. **Rate Impacts:** The start-up cost is amortized over an appropriate time horizon and recovered through rates along with the recurring costs. TD first developed rate impacts for three scenarios that assumed different time horizons for the start-up cost recovery. In all scenarios the basic rates are established by amortizing the fixed costs using an annual cost of capital of 10.5%. A rate of 10.5% is reasonable because such investments could be financed by both debt and equity and this rate represents a market-based cost of capital for these public utilities¹⁵. The three scenarios are tabulated below in table F-2:

Table F-2: Three Scenarios for cost recovery and associated rate impacts

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
A. Proposed Monthly Basic Service Rates Payoff fixed cost in first year	\$69.60	30.69	30.69	30.69	30.69	30.69
B. Proposed Monthly Basic Service Rates Spread fixed cost over 3 years	\$45.04	\$45.04	\$45.04	30.69	30.69	30.69
C. Proposed Monthly Basic Service Rates Spread fixed cost over 5 years	\$40.18	\$40.18	\$40.18	\$40.18	\$40.18	30.69

Scenario A illustrates the proposed basic rates per month based on paying off the non-recurring cost in the first year and charging recurring costs in subsequent years. Scenario B illustrates the proposed basic rate per month by uniformly distributing fixed and annual variable costs over three years. Scenario C illustrates the proposed basic rate per month by uniformly distributing fixed and annual variable costs over five years. Finally, Scenario B and the three-year time horizon was chosen since technological change may occur within that time frame and the

¹⁵ To keep the aggregate estimates simple, the proposed rates use the standard Telecommunications Utility Market Rate of Return (ROR) adopted for some California ILECs in D.98-10-026. Changes in number of access lines, population growth and inflation rates are ignored.

investment and banking community uses this time frame in providing capital for broadband related projects.¹⁶ The monthly impact of building DSL-ready access lines to reach all California Plain Old Telephone Service (POTS) customers would raise the existing basic service rate by 552% (scenario A) or 322% (scenario B) and 276% (scenario C) in the first year.

Impact of Enhanced Basic Service Rate On ULTS Program

To determine the impact of expanded basic service on the ULTS fund budget and resulting surcharge, TD used the Scenario B, Year 1 basic service monthly price of \$45.04¹⁷. The Commission's Universal Service Decision (D.96-10-066) requires ULTS participants to pay 50% of the monthly cost of basic service. TD assumed no change to that decision, resulting in a ULTS monthly subsidy of \$22.52, half of the \$45.04¹⁸ monthly rate. Multiplying the monthly incremental subsidy¹⁹ by the number of access lines²⁰ and annualizing²¹ that figure determines the carrier claims portion of the ULTS fiscal year budget. That amount is \$700.92 million. TD used the ULTS program budget figures from Resolution T-16594 (the revised 2001/2002 fiscal year budget) to determine total program expenses, including administrative expenses, for the year.²² The table below illustrates the impact including DSL in basic service has on the ULTS monthly subsidy, the program budget and its resulting surcharge.

Table F-3 Impact on ULTS Program

¹⁶ Bank Loan Report, "Top-Tier Telecoms Face Rejection From Banks and Bond Market" April 23, 2001.

¹⁷ TD chose Scenario B since technology change is assumed to occur after three years and hence recovering fixed costs over a three-year time horizon seems reasonable.

¹⁸ TD assumes the total cost of including DSL in basic service will be borne by the customer via monthly billings.

¹⁹ The incremental monthly ULTS subsidy per access line is the difference between the existing subsidy per line and the estimated subsidy per line for expanded basic service ($\$22.52 - \$5.34 = \$17.18$).

²⁰ As of November 2001, there were 3.4 million ULTS subscriber lines. $\$17.18 \times 3.4 \text{ million} = \58.41 million .

²¹ $\$58.41 \text{ million} \times 12 = \700.92 million .

²² TD assumed no increases in program administrative fees and merely added the incremental annual cost of including DSL service to the 2001/2002 program expenses to determine the estimated annual ULTS program expenses.

	Current	With DSL	Percentage Increase
Subsidy/Line/Mo	\$5.34	\$22.52	322%
ULTS Budget	\$281.68 million	\$982.60²³ million	249%
ULTS Surcharge	1.45%²⁴	3.96%²⁵	173%

Expanding basic service to include DSL or any advanced technology will impact other public program funds as well. For example, if the Commission determined that to keep rates more affordable, the total cost of expanding basic service would not be borne entirely by the customer but would be partially subsidized, the California High Cost Fund-B (CHCF-B) would be affected. There are many variables involved in an estimate of the impact on the CHCF-B; the determination of an affordable monthly rate for expanded basic service, possible revisions to the statewide average rate and/or a review of the Census Block Groups determining what areas are high cost and therefore eligible for subsidy. All of these variables would affect the final CHCF-B subsidy amount, but without more information, the degree of impact is difficult to calculate.

(End of Attachment F)

²³ Represents the total of the current ULTS program expenses and the incremental cost of adding DSL (\$281.68 million + \$700.92 million = \$982.60 million).

²⁴ The Commission adopted the current surcharge in Resolution T-16435.

²⁵ The surcharge is calculated by dividing the program budget by the billing base. The billing base in Resolution T-16435 was used as a starting point with the proposed DSL revenue added (\$982.60 million / \$24.785 billion = 3.96%).

ATTACHMENT G

Broadband Technology Deployment Types

Broadband Cable Modem Service

In the wake of the 1992 Cable Act, and the deregulation of the industry, cable providers launched a rapid conversion of their facilities to support what they anticipated to be a significant expansion of the video market. Traditional analog cable systems were one-way video broadcast systems. The new cable industry architecture was designed to transmit digital information two-ways, utilizing new fiber optic digital technologies. This upgrade permitted the transmission of signals (in preparation of video on demand and interactive video systems) and a higher capacity of analog video signals, digital video signals and data signals. This upgrade gave the cable industry the infrastructure necessary to participate in the communications industry as an Internet service provider.

The consumer's cable modem is the electronic component that connects the cable network to the users television and computer, and which separately connects the analog portion of the cable network to the consumer's telephone. Because the cable system capacity is shared among a number of adjacent consumers, adjacent consumers will experience degraded digital service speeds as capacity of the shared system is reached, however the analog-telephone portion of the network will remain unaffected.

Broadband DSL Service

DSL (digital subscriber line) comes in a variety of options, all of which provide high-speed data service using existing telephone wiring. Voice alone uses only a fraction of the total capacity available over traditional copper telephone lines. ADSL (asymmetric digital subscriber line) is currently the form that is emerging as the primary type of DSL for broadband Internet connections over the traditional copper telephone distribution network. ADSL is considered asymmetric because the

downstream speed, i.e., from the telephone company to the customer, is faster than the upstream speed, i.e., from the customer back to the DSL provider.

ADSL is a consumer product in that it is designed to provide consumers the ability to download much more information than they send upstream into the internet. Higher bandwidth upstream capacity is available, but at higher prices that are valuable for business or other special applications, such as “Telemedicine”.

ADSL service quality is distance-sensitive. As the distance increases between the customer location and the central office ADSL equipment, the signal speed decreases. The limit for a direct connection ADSL service is 15,000 feet, although new technologies are being employed to extend the reach of ADSL service using fiber optics and remotely distributed electronics. Like cable broadband, ADSL can be deployed along-side analog telephone services.

Broadband Satellite Service

The satellite industry is still in the early stages of developing broadband technologies, with under 15,000 customers. It is often considered to be potentially the best available option in rural communities and other hard to reach locations. Many rural communities fear being left behind as broadband providers deploy high-speed technologies in more profitable areas. Satellite service is often the technology deployed with great success in developing countries that have not developed traditional copper telephone plant systems. As most individuals are unable to afford service themselves, Internet services are available to the public via “Internet cafes” where Internet-access is provided with a computer at a per minute rate charged to the user.

Broadband Wireless Service

The fixed wireless industry provides Internet access and other services over a terrestrial microwave platform. Wireless services and technologies have the potential to deliver high-speed services to residential, rural, and otherwise underserved areas and to increase competition in the “last mile.” To this point, terrestrial fixed wireless

services have been deployed to a considerably lesser extent than the traditional “wired” services, i.e., cable-modem and DSL.

Terrestrial fixed wireless technologies offer several advantages and quick-to-market solutions for the delivery of high-speed services in a number of unique circumstances. At present, however, technical limitations have impeded deployment. Most terrestrial fixed wireless technologies are constrained by line-of-sight restrictions. For example, there must be an unobstructed path from a wireless provider’s antenna to the customer’s antenna on the rooftop of a building. Buildings, topographical features, adverse weather conditions, and even trees can interfere with the provision of service.

(END OF ATTACHMENT G)